

Schizostachyum terminale Holtt., An Interesting New Bamboo Record for Borneo

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Abstract

The bamboo *Schizostachyum terminale* Holtt., first recorded and for more than 30 years known only from Peninsular Malaysia, has been documented for north Borneo. It has a clambering, thicket-forming growth habit and an unusual preference for seasonally inundated swampy riverbanks and alluvial flats.

Introduction

In 1956, Holttum described *Schizostachyum terminale*, known only from the type specimen *Nauen* SFN 35831 (K, SING), collected on the banks of the Krian River in Kedah state, Peninsular Malaysia. A second Malayan collection was made only in 1982 (Wong FRI 32399 — K, KEP, L, SING) from a damp logged-over patch of vegetation beside a stream at Rantau Panjang in Selangor state. Both collections were from the west coast of Peninsular Malaysia and the evidence then indicated a rather restricted distribution. Since 1982, searches along the Krian River and various other rivers near the Malayan west coast have ended in vain, suggesting the species was rare and that its survival was possibly threatened. In 1988, a third collection (Saw FRI 36283) was made from riverine swampy ground at 70 m above sea level, quite inland at the Krau Game Sanctuary near Kuala Lompat in Pahang state.

Recently this species has been discovered in north Borneo, and investigations of wild populations there in the East Malaysian state of Sabah (voucher: Wong FRI 35151 — K, KEP, SING) (Fig. 1) and in Brunei Darussalam (voucher: Wong WKM 2096 — BRUN, K, L, SING) have yielded more information on the growth habit, habitat requirements and general distribution which were hitherto poorly understood. These are discussed in the present paper.

Growth Habit

S. terminale is a small clambering bamboo occurring as clumps, each with 3–10 culms of 8–15 mm diameter. As in other species of the genus, the culms are white appressed-hairy on the internodes, slightly white-waxy, and arise from a sympodially constructed rhizome system. This species differs from other Malayan and Bornean *Schizostachyum* species in having culms which clamber over the surrounding vegetation. This clambering habit is possible through elongation of the primary branch at several nodes, which reiterates the original culm in morphology and habit, and which



Fig. 1. Flowering leafy branch of *Schizostachyum terminale*.

in turn produces further such branches of a higher order. This system of reiterating branches allows the bamboo to clamber and entangle with nearby tree branches, a situation akin to that in *Dinochloa* bamboos (Wong, 1986), except that the culms do not twine.

Occasionally the base of the reiterating branch is thickened and produces roots as does a rhizome, and it is conceivable that when such parts come into contact with the ground, vegetative reproduction is facilitated. In other *Schizostachyum* species, the branch complement also arises from a single primary branch axis at the node, but when fully developed all branches at a node are of subequal size and a dominant is not easily distinguishable; however, development of "aerial rhizomes" (arising from the rooting of thickened branch bases) is also known in other species such as *S. latifolium* Gamble, especially when the culm tip is damaged (Wong, 1990). In *S. terminale*, the branch complement consists of a primary axis which frequently remains dormant initially but later develops to reiterate the culm, and several small leafy branches arising from the basal nodes of this primary axis. In addition, reiterative branch elongation

occurs even without any damage to the original culm. In this way, thickets or curtains of this bamboo arise.

Habitat Conditions

In Sabah, *S. terminale* grows on the seasonally flooded banks of the Kinabatangan River near Tanjung Bulat, at about 15 m above sea level (Fig. 2). Thickets of it drape the vegetation in riverbank forest dominated by the trees *Octomeles sumatrana* and *Terminalia copelandii*. From the mud markings on the vegetation, this forest can be flooded some 2–3 m high. Inundation can last up to several weeks at a time (C.F. Tan, pers. comm.)

In Brunei, *S. terminale* is abundant along low wide stretches of the Belait River (Fig. 3) but above the mangrove or nipah (*Nypa fruticans*) zones, at 15–20 m above sea level. There it grows in the seasonally inundated swampy banks and alluvial flats together with *Syzygium* spp., and the common riverbank rattan *Daemonorops fissa*. The waters can rise some 2 m higher during heavy rains, especially around May–June and September–November. The species is absent in forest away from such seasonally inundated riverine zones.

Bamboos are generally known to occur only away from swamp habitats, but *S. terminale* is a clear exception. Its distribution only in the habitats recorded above suggests its restriction to swampy ground and a tolerance of prolonged inundation. Elsewhere, *Chusquea paludicola* Clark is known to inhabit highland *Sphagnum* peat bogs above 2,000 m altitude in Costa Rica (X. Londono, pers. comm.; Clark, 1986), although in those situations such prolonged severe inundation does not occur.



Fig. 2. Undergrowth thickets of *Schizostachyum terminale* along the flood-prone bank of the Kinabatangan River, Sabah.



Fig. 3. Tangles of *Schizostachyum terminale* on the bank of the Belait River, Brunei.

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